DOCUMENT RESUME

ED 238 669 SE 039 724

TITLE	Women: Tapping a New Resource for Energy.
INSTITUTION	Consumer Action Now, New York, NY.
SPONS AGENCY	Department of Energy, Washington, D.C. Office of Consumer Affairs.
PUB DATE	[82]
NOTE	30p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Conservation Education; Employment Opportunities; *Employment Patterns; *Energy; Energy Conservation; *Females; Higher Education; Industry; Postsecondary Education; *Program Descriptions; Program Development; Salaries; *Solar Energy; Womens Education
IDENTIFIERS	*Energy Education; *Energy Project For Women

ABSTRACT

In 1973 the Arab oil embargo triggered what has come to be known as the "energy crisis." In 1974, Consumer Action Now (CAN) decided to devote its full efforts to the grave issues of energy and to look for options that would preserve our choices as a new energy era is entered. Any transition to a more energy-efficient society depends on a massive effort to educate and mobilize all American people, in particular women. It is believed that, given the educational tools, women will lead the movement for the wise use of vanishing resources and for the development of clean, renewable energy sources. For this reason, CAN has undertaken an Energy Project for Women. This document discusses the rationale for and development of the project. Topics discussed include: role of women in a new energy era, women in science, CAN's Energy Project for Women, women and solar employment, Energy Project takes shape, community projects, a conservation and solar path, and giving women the tools. These "tools" are do-it-yourself guides on how to save money and energy. Lists of CAN's publications and educational/technical training programs in solar energy are provided in appendices. (JN)

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Women: Tapping a New Resource for Energy

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Women: Tapping a New Resource for Energy

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Acknowledgements:
There are a great many people who have been essential to this project, on whose shoulders we have leaned, whose minds we have tapped, and on whose financial support we have depended. No doubt our debts are large, and we thank everyone who has played a role in the germination of the project and who has helped us refine and focus our ideas.

We would like to thank the Department of Energy's Conservation and Solar Applications Branch, Office of Consumer Affairs and the Environmental Branch, and the Environmental Protection Agency for their financial contributions. In particular, we owe a great deal to the following staff members of the Department of Energy: Lynda Brothers, Ruth Clusen, Lynda Connor, Herb Fish, Tina Hobson, Alan Hoffman, Harry Loeper, Holly Miller, Jerry Penno, Omi Walden, Shelley Weinstein and Mary-Lynn Wrabel; and from E.P.A.: Barbara Blum, Mary-Averett Seeyle, Beth Sullivan and Joe Handy.

To Ann Becker and Clifflyn Bromling, whose assistance kept our project's conceptualization in focus and facilitated the workshop, and to Stacey Katz and our editor Joan Byalin, we extend our thanks.

And we owe a special thanks to the staff of Consumer Action Now, who have worked long hours to bring the pieces together: Jean Brett, Molly Burke, Virginia Craig, Barbara Henry, Eileen Hodges, Frank O'Halloran, Jeannie Spisto and Elizabeth Tinsley, and to all the tireless volunteers that keep C.A.N. running.

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Photo credits: page 4: from top to bottom, left to right, Energy Task Force, Julie Solomon of Energy Users News, Grumman's Solar Plant, Energy Task Force, and Janet Fries (at the Solar Center, Calif.); page 7, Guy Gilette; page 10, Harry Schaefer; page 12, Redbook magazine; page 20, Lewis & Gilman, Inc.

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Background

Consumer Action Now, Inc. (C.A.N.), a non-profit organization, was founded in 1970 out of a growing concern for the quality of the environment. The goal of C.A.N. — then a group of 25 full-time volunteer women — was to make consumers aware of the impact of their consumption habits on the environment and to arouse consumer interest in changing those habits.

For three years C.A.N. published a newsletter that each month addressed a specific topic of concern to consumers. To further understanding of environmental problems and their solutions, C.A.N. members appeared on television and radio talk shows, and lobbied actively at state and national levels for sound environmental and consumer legislation.

In 1974 when it became clear that energy demand and supply would cause profound problems in the future, C.A.N. focused all of its efforts on advocating energy conservation and promoting clean, renewable resources. Since then C.A.N. has testified frequently before government agencies and Congressional committees and has carried out an active program of public education to focus national attention on the practicality of solar energy.

From construction to management women are showing their eagerness to take responsibility for energy.

In 1975 C.A.N. established a separate organization in Washington, D.C., for the specific purpose of lobbying for solar energy. It was the first full-time, professional solar lobby in the nation's capital. In order to increase its effectiveness, C.A.N. merged the Washington office to form the Solar Lobby in 1978.

C.A.N.'s New York office concentrates on educational and research activities. It has produced a solar energy slide show for national distribution, sponsored a solar hot water demonstration project in a New York City apartment building, spearheaded the celebration of SUN DAY in New York (May 3-6, 1978),

"To break the mythology that energy is a 'problem' that individual citizens -- particularly women and children -- should leave in the hands of the 'experts', the government, the industrial community."

Jerry Penno
Department of Energy

held workshops, seminars and exhibits, and published a wide range of educational and resource materials. (A publications list appears in Appendix I.)

Three years ago C.A.N. made a transition from a volunteer to a professional organization with a full-time staff. Funding is derived from private sources, public contributions, memberships, and through foundation and government grants.

A New Energy Era: The Role of Women

In 1973 the Arab oil embargo triggered what has come to be known as the "energy crisis". Yet long before then, experts were warning that the world's fossil fuels were diminishing rapidly. And, in fact, U.S. oil production peaked in 1970 and thereafter began to decline. By 1990 world oil production is expected to do the same.

Clearly, the way we produce and consume energy today is causing problems that raise grave doubts

"As a people we have developed a life-style that is draining the earth of its priceless and irreplaceable resources."

Margaret Mead
Redbook 1974

about our nation's economic and social future. Automobile emissions render the air of our cities unfit to breathe; oil spills blacken our coastlines and threaten the health of the oceans; shortages of supply and constant price rises for oil and gas disrupt our lives and play havoc with our paychecks. Day by day, the American public grows more skeptical and angry, unsure of whom to believe or blame and at a loss about what to do.

In 1974 C.A.N. decided to devote its full efforts to the grave issues of energy and to look for options that would preserve our choices as we enter a new energy era. C.A.N. was convinced that alternatives such as gas and coal and nuclear power were little more than temporary solutions, and unless we moved toward developing longer-lasting sources, we would continue to confront an unstable future. Moreover, as a group of concerned women, with increasing responsibilities at home and at work, we knew that women at large had a greater economic interest in energy than ever before.

C.A.N. believes that energy conservation and solar power are the most cost-effective and least environmentally damaging options available. It is a view that has gained increasing acceptance among experts in academia, government, business and the public sector. For example, in 1979, the report of a six-year study by the Harvard Business School singled out conservation and solar as the key to our energy future: ***The prospect for dramatic increases in domestic supplies from the four conventional fuels—oil, gas, coal and nuclear—is bleak, but whether the four domestic sources increase somewhat, remain constant, or decline, the broad choice before the United States is the same—increased dependence on imported oil, or a transition to a more balanced energy system in which conservation and (low technology) solar play large roles.***

While studies such as this are encouraging, we believe the transition to a more energy-efficient society will not become a reality unless a massive effort is made to educate and mobilize *all* the American people. Women, in

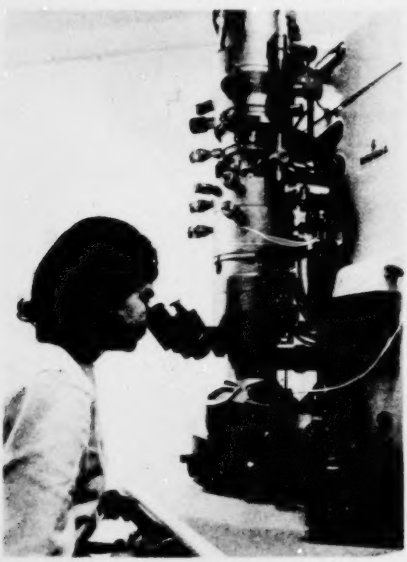
particular, can no longer afford to remain silent as government and industry debate the pros and cons of one energy solution or another. Women must insist on full participation in those debates as well as taking part in decision-making at the local level.

Tapping the Potential of Women

To date little effort has been made to involve women in energy issues. Yet women make over 80% of all consumer purchases, play a major role in managing family budgets, and to a large extent control energy use in the residential sector. Over 17 million American families are headed by single mothers.

While 50% of American women are in the work force, very few are employed in technological and scientific fields due to traditional barriers. For example, engineering is experiencing great growth and will continue into the 1980s and yet women represent only 1/10 of 1% in this field. New career opportunities are opening up in conservation and energy technology, but unless women become aware of this potential, they will continue to be excluded from the higher-paying, policy-making positions in the energy field.

Throughout history women have organized to bring about social change. Recently, they have played a key role in the civil rights, environmental, consumer and peace movements. We believe that given the tools, women will lead the movement for the wise use of our vanishing resources and for the development of clean, renewable energy sources. It is for this reason that C.A.N. has undertaken its Energy Project for Women.



Women in Science

- Women are not earning doctoral degrees in any greater proportion in 1979 than they were in the 1920's.
- Only 1/10 of 1% of the engineers in this country are women.
- Only 5% of the chemists are women.
- Only 2% of the physicists are women.
- Women seeking scientific and technical careers earn less than men *in every field, at every degree level, at every level of experience,* and *in every employment setting.*

Source: Congressional Record, March 7, 1979.

C.A.N.'S Energy Project for Women

In December 1978, C.A.N. began the first phase of a program to develop and carry out a national energy education project designed to encourage women to take an active role in shaping the transition to a society based on conservation and renewable resources.

Our goals are to show women how energy decisions—whether voted by Congress or made by women at home—have an immense economic impact on their lives, and how women can influence those decisions. We hope to give women the tools to seek community solutions to energy problems and to promote energy sources which are less wasteful and damaging to the environment. Moreover, we wish to encourage women to pursue employment and business opportunities in the energy field and become involved on all levels in making the energy policy that will shape our lives.

From experience gained in ten years of consumer education, C.A.N. identified a number of important criteria which we felt must be met if the Energy Project is to be effective in accomplishing our objectives.

First, a wide cross-section of women representing varied geographical regions, interests, and levels of awareness, has to be involved in addressing energy problems and seeking solutions. C.A.N., therefore, will bring together constituencies that in many cases have not worked together before, such as scientists, union members, homemakers, business women, members of local women's clubs and women in communications.

Secondly, the Energy Project will emphasize local solutions to national needs by addressing energy problems that affect people in their communities. All too often, educational programs focus on problems at a national level, thereby failing to involve people by not relating directly to their particular concerns. Energy problems vary from region to region; needs are different in urban areas than in rural. Residents of the

Women welder at work for American Electric Power.

Northeast have vastly different concerns than those of the Southwest, and vice-versa. Unless a program "hits home", we can expect little change in consumption patterns.

Thirdly, C.A.N. will involve women in every stage of development and implementation of the Energy

Project. If the Project is to be successful in motivating action, women must have the opportunity from the very first to define their needs and design the projects best suited to meeting those needs. C.A.N. will work closely with local people to develop and tailor programs that take into account the concerns, priorities and resources of their communities.

Finally, C.A.N. will make extensive use of local and national media to ensure that the Energy Project's message reaches the widest possible audience.

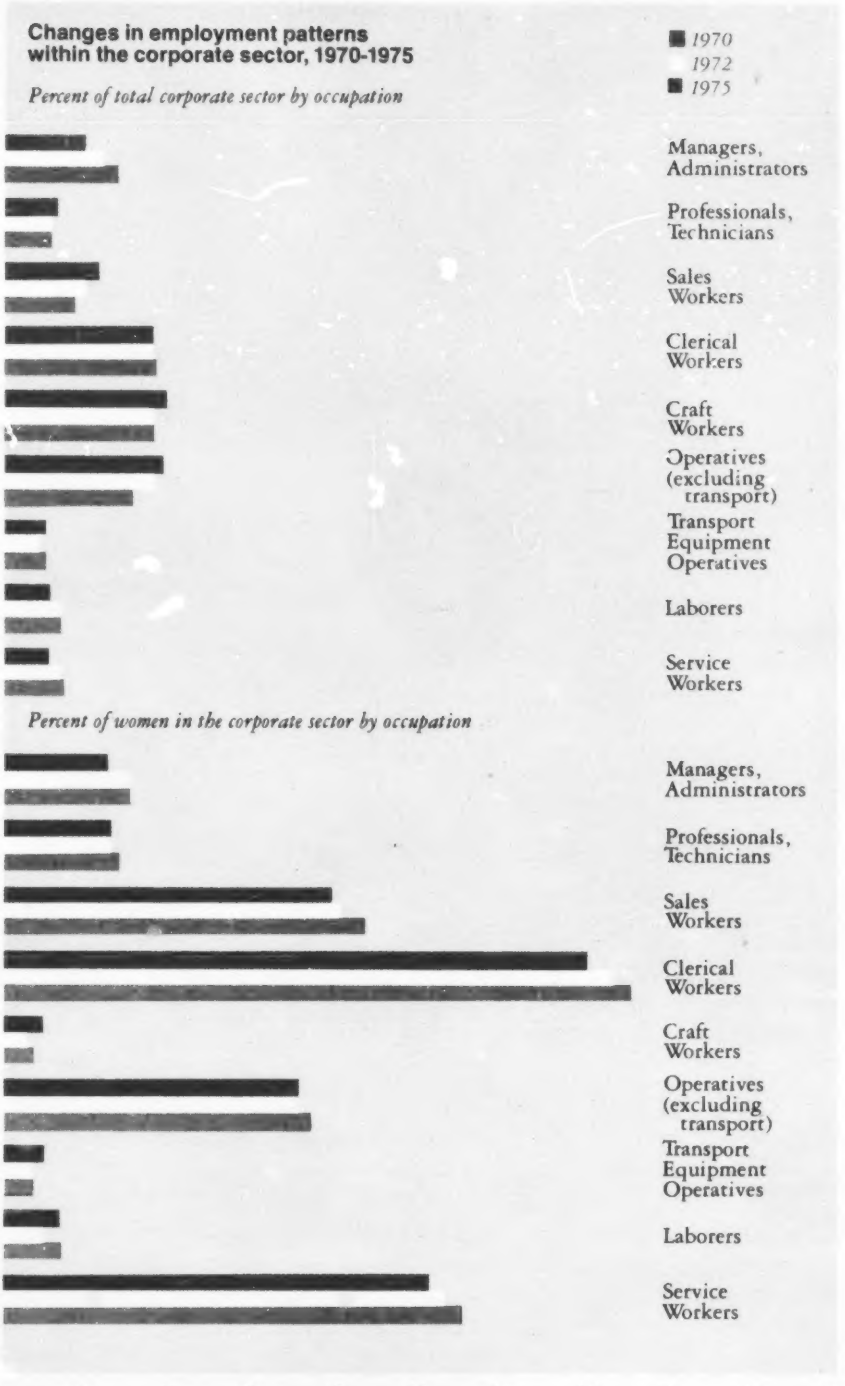
Women and Solar Employment

Our present economy is based on constantly increasing energy production. However, with a dwindling supply of fossil fuels and the hazardous unacceptable alternative of nuclear power, we must look to conservation and solar production. Women must take part in the planning and implementation of the solar era to assure their place in this new field. A study commissioned by the Joint Economic Committee of the U.S. Congress estimates that if the country chooses a solar and conservation path rather than reliance on conventional fuels, we will *net* as many as 2,000,000 jobs by the year 2000! How will women earn a living in a world powered by a renewable energy supply?

Women will be able to obtain jobs in the solar and energy conservation fields. If they learn the new energy language, the opportunities will be unlimited. They can use this knowledge to enter a new sector of the economy free of traditional sexism.

There will be a whole range of jobs opening up from well paying blue-collar positions to professional and management positions. There will be jobs in solar construction, installation, semi-skilled manufacturing and solar maintenance. There will be technical jobs for architects and engineers as well as management positions in the solar industry. In conservation efforts, there will be new roles and responsibilities in retrofitting—skilled workers such as carpenters, cement masons, electricians and plumbers. All of these positions have higher earning potential than traditional women's jobs. For women entrepreneurs, solar business represents a chance to get in on the ground floor. The government will give assistance through small business loans and solar tax credits. Finally, there will be new opportunities for leadership in the professional world—in the governmental and political arena as well as for lawyers and economists. This is woman's chance to shape a new world based on a renewable energy supply.

Solar energy needs the attention of the government—encouragement for investment, education, research, regulations and consumer protection. It needs the attention of the public. Although some are still skeptical, many people have used their ingenuity to design and install their own systems. Perhaps that is one of the greatest beauties of solar energy: it puts people back in control of the technology they must depend upon to survive.


Changes in employment patterns within the corporate sector, 1970-1975
Percent of total corporate sector by occupation
1970
1972
1975
Managers, Administrators
Professionals, Technicians
Sales Workers
Clerical Workers
Craft Workers
Operatives (excluding transport)
Transport Equipment Operatives
Laborers
Service Workers
Percent of women in the corporate sector by occupation
Managers, Administrators
Professionals, Technicians
Sales Workers
Clerical Workers
Craft Workers
Operatives (excluding transport)
Transport Equipment Operatives
Laborers
Service Workers
0
10
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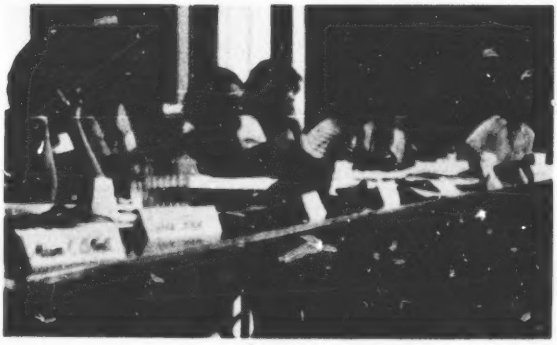
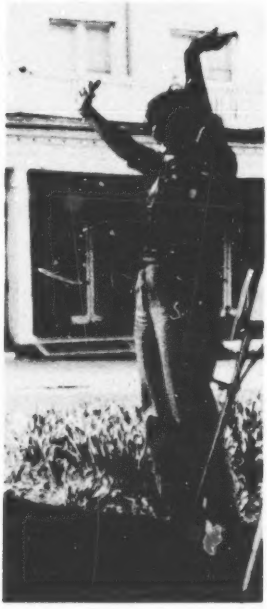




The Energy Project Takes Shape

Harpers Ferry: Involving *Women* in Designing an Energy Education Program for *Women*

To ensure the widest possible involvement of women in shaping the Energy Project, C.A.N. organized a three-day "brainstorming" workshop, which was held in Harpers Ferry, West Virginia from May 9 to 11, 1979. The goal of the workshop was to identify the energy issues of importance to women and to design specific community projects that would encourage women to come to grips with these issues at the local level.

Considerable care was taken in selecting the twenty-five women who came to Harpers Ferry. We were anxious to invite women from across the country who represented diverse interests and points of view.

"Most energy policy is still framed as though it were addressing a problem that our grandchildren will inherit. But the energy crisis is our crisis."

Denis Hayes
Rays of Hope

Participants came from eleven different states, including Colorado, Illinois, Massachusetts, New Mexico, Texas and Washington. Urban and rural constituencies were represented, as were grassroots and national organizations, such as the League of Women Voters, the American Association of University Women and Americans for Indian Opportunity.

Participants in the Harpers Ferry Brainstorming Workshop met in West Virginia for three days to discuss energy issues as they apply to women.

"To me, energy issues are issues of power, authority and control. Women must become involved in making decisions about energy production and distribution because those decisions determine the nature and shape our society will take."

Margaret Morgan
Energy Task Force

Many of the women had long-standing involvement in the fields of environmental education and energy conservation and renewable resources. Others brought their community organizing skills and knowledge of public relations and media, and others their perspective and sensitivity towards the needs of low-income and minority women[1].

In structuring the workshop, C.A.N. sought to create an environment that would encourage the fullest involvement of each participant. This was accomplished by having small group meetings to maximize discussion and information exchange, and plenary sessions to allow the participants to respond as a whole to the ideas generated by the smaller groups.

The women's response was enthusiastic. All were in agreement

that this format resulted in a fruitful and stimulating exchange of ideas and facilitated the identification of common themes and the hammering out of constructive projects.

Establishing Priorities

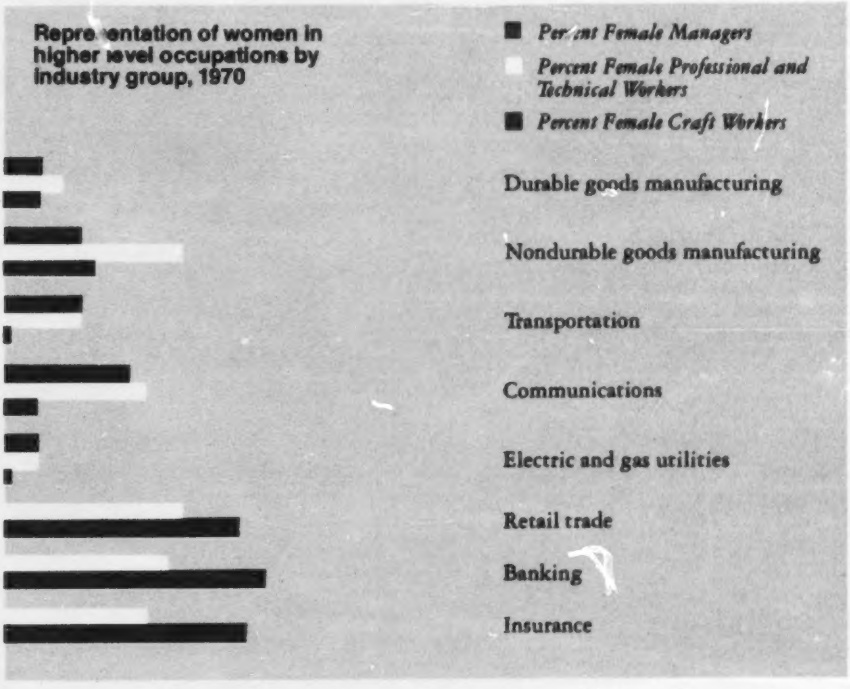
The first task of the workshop was to identify the most important issues in energy conservation and renewable resources. By the end of the first day a consensus had been reached on the top priorities to be addressed by the energy education project. These included conserving energy in transportation, reducing home fuel consumption, understanding the impact of energy conservation on employment patterns, and decentralizing of energy sources[2].

The participants also outlined a broad range of strategies for changing public attitudes and increasing awareness. They agreed on the importance of addressing local needs and maximizing the use of local resources, as well as the need to find communication techniques to interest more women in energy issues that relate to their daily lives.

"I feel that we are at a major turning point in our society. We only have a limited amount of time to move in a direction which will make not only our communities but our planet sustainable."
Lola Redford
Consumer Action Now

Developing Community Projects

The next task before the workshop was to identify programs that would encourage women to address the priority energy issues in their local communities. As a first step in this process, the participants consoli-



dated the priorities into five main program areas: (1) home efficiency and weatherization; (2) transportation; (3) energy decision-making[3]; (4) energy production and distribution systems; (5) food and agriculture.

Each of the program areas sparked lively debates as it became clear that energy problems raised complex social and economic questions. For example, the program area of home efficiency and weatherization raised such issues as the role of utilities in affecting consumer patterns, the safety of certain insulating materials, and how business might be encouraged to produce more efficient weatherizing materials.

"Conservation must be explained and sold to American women in terms of doing more with less rather than in terms of sacrifice and deprivation."

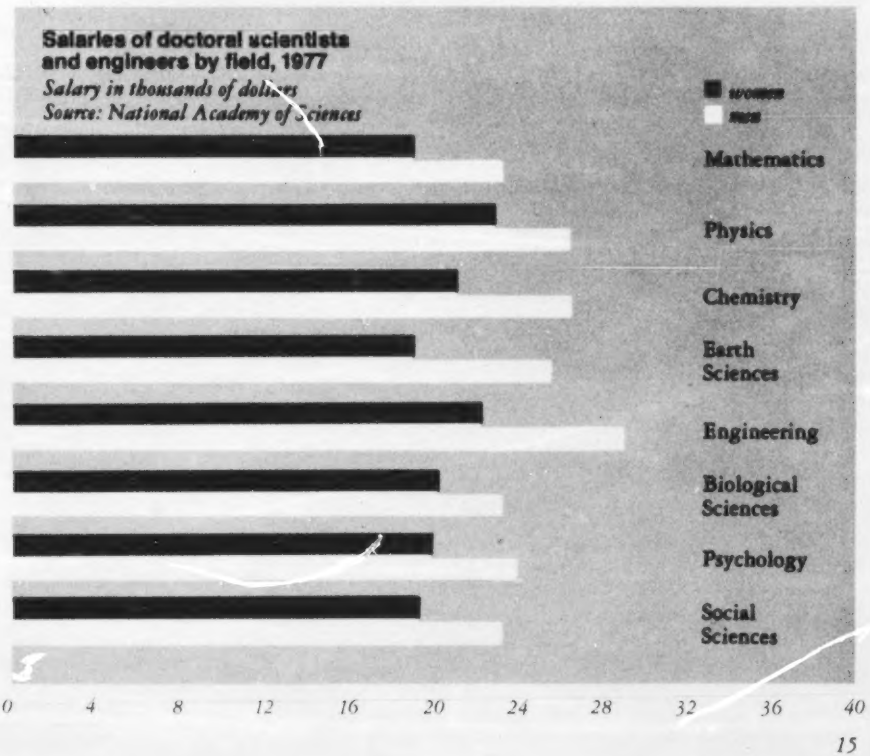
Dana Jackson
The Land Institute

Having decided on the main areas in which women could have the greatest impact on energy use, the workshop then set out to sketch specific community projects to be carried out by C.A.N. in each program area. In planning these five projects, the working groups were asked to take into account the goals, audience, organizational and educational strategies, and community resources which would be required.

[1] A list of participants appears in Appendix II.

[2] A composite list of twenty priorities appears in Appendix III.

[3] C.A.N. later decided to incorporate the project on energy decision-making into the other four projects.



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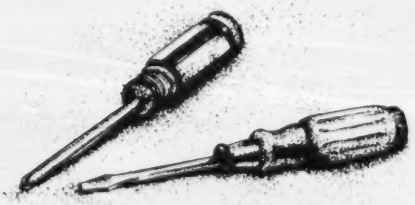
The Community Projects

The development and implementation of the four community projects outlined at Harpers Ferry will be the major thrust of C.A.N.'s Energy Project for Women during the coming two years. Funding has already been secured from HEW for one of the projects, which will be carried out in Stamford, Connecticut.

Through these pilot projects we hope to show how women working in their own communities in cooperation with local organizations can bring about dramatic changes in energy consumption patterns. We think the projects will demonstrate that conservation need not mean curtailment and that renewable energy sources are cost-effective.

C.A.N. will evaluate the projects at the end of 1980, and, if warranted, expand our outreach to additional communities across the nation.



Following is a brief description of the four community projects. Common to each project is the underlying objective of stimulating women's participation at all levels in decision-making on energy issues. However, it must be noted that each project may be adapted by the local community according to community needs, priorities and other project criteria.

Community Project Number 1: Home Weatherization/Energy Audit

Nowhere does the individual have a greater potential to reduce energy consumption than in the area of home heating and cooling. The Home Weatherization/Energy Audit Project will give women the tools to reap the enormous energy and financial savings that result from home weatherization. Special attention will be given to the needs of low-income women since they are the ones hardest hit by the constantly rising costs of heating oil.

Since an energy audit is necessary to identify the energy leaks in a building, the project will first train women to audit their own homes and evaluate them for energy efficiency. Women will learn how to recognize energy leaks—deficient furnaces and chimneys, drafty windows and doors—and they will learn how to correct them.

The second phase of the project involves the setting up of "audit services" and weatherization programs in the community. These could be women-owned, profit-making enterprises or could be undertaken as a public service by local women's clubs and organizations.

Community Project Number 2: Transportation

Transportation currently accounts—directly or indirectly—for 42% of all energy consumption in the U.S., with 25% of the U.S. energy budget expended on transport fuel alone.

The Transportation Project will address ways of reducing gas consumption by reducing women's dependence on the car. It will also teach women how to buy more energy-efficient cars, how to measure car performance and how to reduce their dependence on car mechanics.

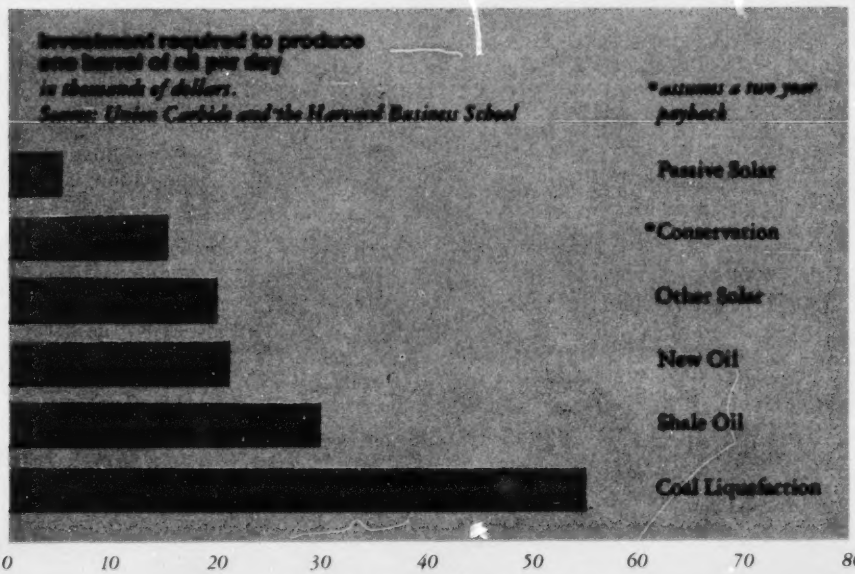
The project will be sited in a suburban community with a well-developed network of community organizations. During the first phase, C.A.N. will work with local organizations to assess the community's transportation patterns and explore possible alternatives. These might include carpooling, development of adequate bus services, and establishment of bicycle and pedestrian lanes.

The second phase of the project will address ways of securing state and federal funding for mass transit programs. Women will learn how to investigate government subsidies and incentives, how to lobby and how to follow through on legislative proceedings.

Community Project 3: Energy Production and Distribution

Public ignorance and confusion about the economics of energy production and delivery systems are a major stumbling block to consumer participation in energy decision-making. What are the comparative costs of various energy sources? How do the costs of delivery options vary, e.g., public or private utility?

The aim of this project is to help women understand their relationship to local utilities and home delivery systems. As a first step in this process, workshops will be held to aid women in understanding their home utility bills, energy unit costs, rate structures; and such concepts as "cost of service" will be explained in non-technical language.



The project will also address how energy decisions are made by local utilities, how utilities are regulated, and how matters affecting future supply are decided. The last phase of the project will examine the role of the community in affecting these decisions and will develop strategies for community action.

Community Project 4: Food and Agriculture

With the growing reliance on mechanized farms, fertilizers and irrigation, food production in the U.S. has become increasingly energy-intensive. Yet the energy expended in actual cultivation is only the tip of the iceberg, accounting for 20% of food-related energy use. The remaining 80% of the energy is used in the processing, distribution and preparation of the food we consume.

The objectives of this project are two-fold: to teach women what steps can be taken to create a more energy-efficient food system and to implement local strategies to achieve this goal.

The first step will be to design educational modules on production, transportation, processing and storage, marketing, and the preparation of food. After an appropriate site is selected and community networks involved, the modules will be used in programs to encourage seasonal buying, change of diet habits, the establishment of food cooperatives, and the reduction of convenience food consumption. All of these represent immediate changes a community can make toward a more energy-efficient food system.

"Women as bearers and conservers of life, as those who first guide children, should be foremost in dedication to the environmental cause."

Molly Peter
U.S. Environmental Protection Agency

Depending on local commitment and resources, a working partnership between rural and urban women could develop, addressing issues such as direct access to local produce, food production enterprises, processing facilities and resulting delivery systems.

The Conservation & Solar Path

Conservation is the least expensive and one of the most abundant energy "sources" this country has. Energy made available through conservation is safer, more reliable, less polluting than energy from any other source. Conservation can strengthen the dollar overseas, decrease our vulnerability in foreign affairs and save consumers billions of dollars a year.

Numerous studies have shown that with cost-effective technology this country could use 30–50% less energy. Unlike conventional power sources (such as coal, oil, gas and uranium), conservation means a *permanent* reduction in energy consumption. It does not require endless discoveries of new oil and gas fields, or coal and uranium deposits, to replace the supplies we have already depleted.

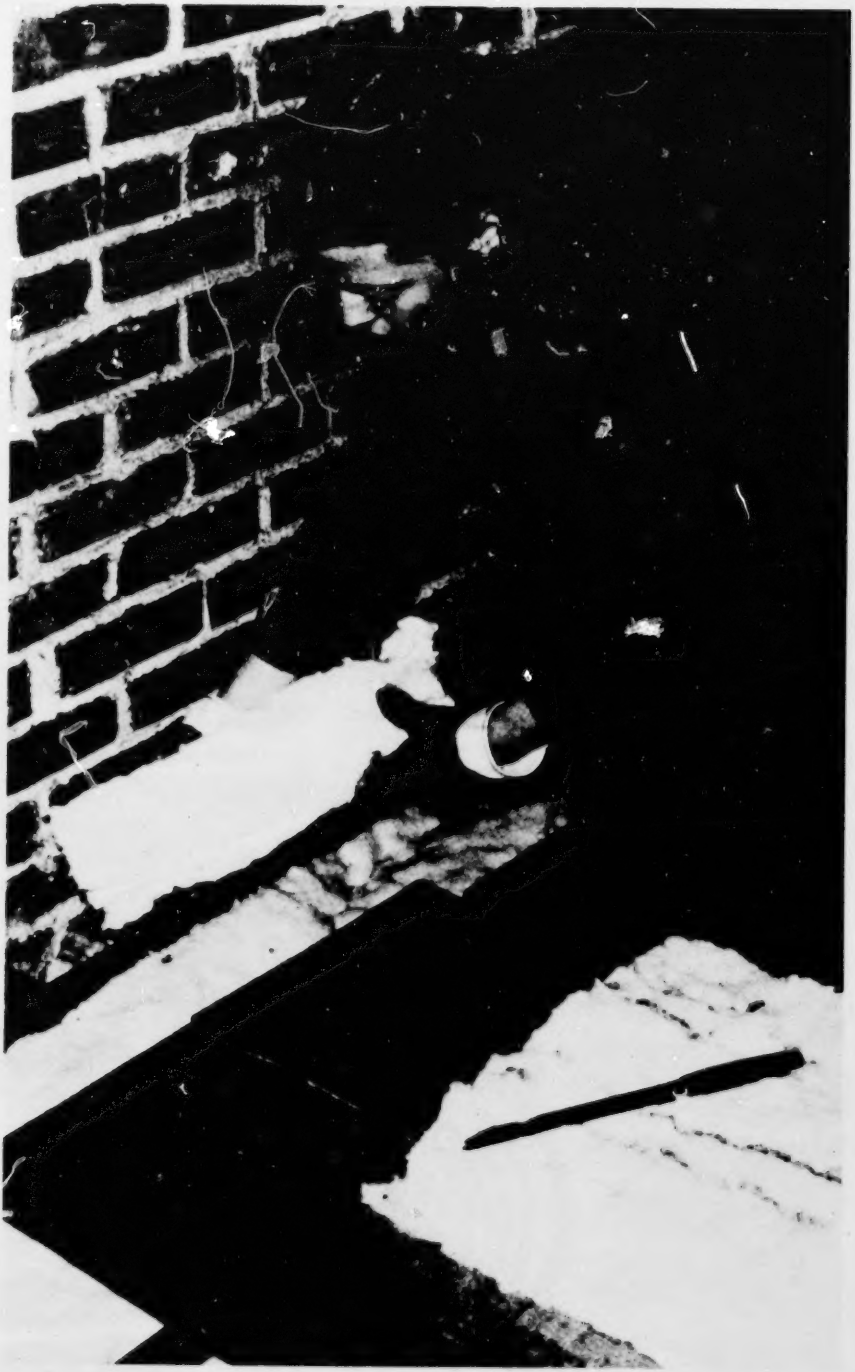
In addition, there are estimates that, rather than constricting our economy, the energy conservation industry could generate up to $500 billion in capital outlays between now and 1985. Unfortunately, conservation is all too often referred to as curtailment--doing without rather than doing it better. Conservation does not mean cold homes and closed factories. It means making our industries, our commercial and residential buildings, and our transportation systems more efficient. Conservation should be the foundation of any national, state or local energy strategy.

In the long run, conservation cannot completely eliminate the need to produce energy. It can buy the time this nation needs to make the transition to clean, renewable resources.

Solar energy is not just a flat-plate collector, but includes a host of options: passive solar design, solar space and water heating and cooling, biomass, and direct electric conversion from wind, water and photovoltaics. Nor is solar energy an idealist's dream. Solar collectors are widespread throughout the world -- over two million in Japan alone, according to the Worldwatch Institute. Solar design is adaptable climatically, from tropical Florida to arctic Scandinavia. And new technological innovations such as the recent breakthrough in silicon synthesis for photovoltaic cells are constantly placing solar power within reach of the average citizen.

Even though the initial cost of solar hardware is high, it is still less expensive than oil, coal and nuclear energy, and below the investments necessary for synthetic fuel development. And if the government subsidies of oil, coal and nuclear, in the form of biased rate structures and direct funds, were taken away, solar energy would compare even more favorably.

Like conservation, solar energy is a labor-intensive industry -- 425% more labor-intensive than conventional power industries. The Joint Economic Committee of the U.S Congress estimates that if this country follows the soft energy path, 2,000,000 jobs will be created (not to mention potential capital saved on fuel bills).



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Giving Women The Tools

The Energy Tool Kit for Women

As part of the Energy Project for Women, C.A.N. envisions an energy manual for women in each of the Project's four program areas: Home Heating and Weatherization; Transportation; Energy Production and Distribution; and Food and Agriculture.

The manuals, in the innovative format of an Energy Tool Kit, will be do-it-yourself guides on how to save money and energy. Each manual will include "how-to" sections on community organizing and working with the government, and a section on the job potential in the energy field.

"Energy umbrellas every aspect of our lives -- more than just the way we heat our living spaces or what we put into our automobiles -- it's how we eat, the clothes we wear, the games we play, etc. I would like to see some kind of understandable breakdown of the real energy cost of our consuming patterns."

Cynthia Stein
Consumer Action Now

The first volume of the Energy Tool Kit on Home Heating and Weatherization will provide, in non-technical language, step-by-step information on "how to" assess home efficiency, establish conservation priorities, and take specific action to improve home energy use. It will demonstrate how to use a hammer and pliers and nails and caulk a window or weatherstrip a door.

Other Educational Tools

C.A.N. has designed a special two-hour workshop, which includes an energy slide show. The workshop was first held at the National Women's Political Caucus Biennial Convention in July 1979, where it received the largest turnout of any Convention workshop. In the coming year, we plan to bring the workshop to other important regional and national meetings, as well as making the slide show available to women across the country.

C.A.N. will also make extensive use of local and national media to promote the Energy Project's objectives. Our Consumer Information Center continues to respond to thousands of information requests received during the year. (See Appendix I for information available from the Center.)

Insulating in attic and around chimney aids in conserving home energy use.

APPENDIX I: LIST OF C.A.N.'s PUBLICATIONS

C.A.N. Information Packages

Consumer Information on Conservation and Solar Energy (Pamphlets and tips on solar power and saving energy)

C.A.N.'s Energy Project for Women

Women and Energy Speeches:
Lola Redford, *"Women: Tapping a New Resource for Energy"*
Irmgard Hunt, *"The Potential of Employment for Women in Solar Energy and Conservation"*
Maura O'Neill, *"The Economics of Energy"*

Training and Career Information (advice, training sources and bibliography)

Solar and Conservation Tax Credits, Loans and Subsidies (national)

Plan of Claire Pollack's Passive Design Solar House (1 page)

C.A.N. Publications

Environmental Curriculum (detailed study guide for elementary schools)

Past Newsletters

Who's Who In Energy and Conservation (descriptive New York directory)

Reading Up on Solar Energy (descriptive bibliography)

Plugging Into Solar Energy (introductory booklet)

Rays of Hope: The Transition to a Post-Petroleum World (paperback)

Women: Tapping A New Resource For Energy

Additional Pamphlets

MS. Magazine Article on Lola Redford and C.A.N.

"Facts of Solar Living" by Lola Redford and Maura O'Neill (*MS.* Mag.)

Passive Design Ideas for the Energy Conscious Consumer (H.U.D. & D.O.E.)

Solar and Conservation Tax Credits, Loans and Subsidies (New York City and State only)

Tips for Energy Savers (Department of Energy)

Solar Electricity from Photovoltaic Converters (Dept. of Energy)

Solar Greenhouse Bibliography (Housing and Urban Development)

Business Week reprint: *Special Report on Solar Energy*

For order forms and prices send a stamped, self-addressed envelope to: Consumer Action Now, 355 Lexington Avenue, 16th Floor, New York, N.Y. 10017

APPENDIX II: LIST OF PARTICIPANTS FOR THE BRAINSTORMING WORKSHOP
Harpers Ferry, West Virginia May 9-11, 1979

Margaret Allen, *Former Education Specialist, UAW, Baltimore, Maryland*
Harriet Barlow, *Institute for Local Self Reliance, Washington, D.C.*
Beth Sullivan, *Environmental Protection Agency, Washington, D.C.*
Dee Boersma, *University of Washington Seattle, Washington*
Sylvia Chase, *ABC News, New York, New York*
Vicki Smith Downing, *International Venture & Equity Capital, Dallas, Texas*
Maggie Gover, *Americans for Indian Opportunity, Albuquerque, New Mexico*
Joanna Hoelscher, *League of Women Voters, Elmhurst, Illinois*
Irmgard Hunt, *Consumer Action Now, New York, New York*
Dana Jackson, *The Land Institute, Salina, Kansas*
Elizabeth Kingman, *Energy Education Specialist, Denver, Colorado*
Silvia Koner, *Redbook Magazine, New York, New York*
Margaret Morgan, *Energy Task Force, New York, New York*
Maura L. O'Neill, *Consumer Action Now, New York, New York*
Betty Ann Ottinger, *Psychotherapist, Prof. Catholic Univ., Washington, D.C.*
Jerry Penno, *Department of Energy, Washington, D.C.*
Lola Redford, *Consumer Action Now, New York, New York*
Pat Lewis Sackrey, *Center for Rural Communities, Amherst, Massachusetts*
Cynthia Stein, *Consumer Action Now, New York, New York*
Gayle B. Uilkema, *AAUW, Lafayette, California*
Mary-Lynn Wrabel, *Department of Energy, Washington, D.C.*

Ruth Clusen, Tina Hobson, Lois Perkins, Omi Walden, and Shelley Weinstein were involved in the planning of this project but unfortunately were unable to attend the workshop.

Workshop Facilitators: Ann Becker, Clifflyn Bromling

Support Staff: Eileen Hodges (C.A.N.), Stacey Katz (Ann Becker & Assoc.), Jeannie Spisto (C.A.N.)

APPENDIX III: TWENTY PRIORITIES OUTLINED AT BRAINSTORMING CONFERENCE

The following is a composite list of twenty priorities for energy education for women outlined at the Brainstorming Conference:

1. Self-reliance
2. Health
3. Institutional changes (e.g., exploitation tax rather than depletion allowances)
4. Non-violent national security
5. Useful, consistent information geared to specific audience

6. Decentralization
7. Promotion of appropriate technology
8. Transportation
9. Energy decision-making
10. Weatherization
11. Reduction of energy growth
12. Explanation of rate structures and the role of the energy industry
13. Employment in the energy field
14. Economics: a) Energy and inflation
    b) External costs
15. Assessment of local needs and local resources
16. Class analysis — income distribution related to energy production, distribution and use
17. Overcoming barriers
18. Translating information into action
19. Improvement of living style through more efficient use of energy
20. Interdependence of all people

APPENDIX IV: EDUCATIONAL AND TECHNICAL TRAINING PROGRAMS IN SOLAR ENERGY

There are currently thousands of schools across the country offering educational courses and training in every aspect of solar use and environmental control. The *National Solar Energy Education Directory*, a very thorough resource, gives a complete national listing and is available from the Superintendent of Documents, U.S. Printing Office, Washington, D.C. 20402, for $4.75. The *Directory* is available free of charge from the National Solar Heating and Cooling Information Center by calling (800) 523-2929, in Pennsylvania (800) 462-4983. New programs and courses are continually being instituted, so our list is not complete.

New Solar Courses
(Not listed in the National Solar Energy Education Directory of 2/79)

Southeastern Massachusetts University
North Dartmouth, Mass. 02747 (617) 999-8000
Course: Social Aspects of Solar Energy Robert Bento

CUNY City College
New York, New York 10031 (212) 690-6741
Course: Solar Energy for Scientists Harry Lustig

Metropolitan State College
Denver, Colo. 80204 (303) 629-2400
Course: Power Generation and Energy Utilization of Solar Energy Plants John Meyers and Howard Smith

Pitzer College and Harvey Mudd College
Claremont, California 91711 (714) 626-8511
Course: Environmental Studies, Solar Colloquium John Rodman, Carl Hertel and Robert Wolf

Swarthmore College
Swarthmore, Penn. 19081 (215) 544-7900
Course: Solar Energy Systems Arthur McGarity

University of Illinois (at Urbana-Champaign)
Urbana, Illinois 61801 (217) 333-1000
Course: Introduction to Renewable Energy Sources Charles Bond

University of Kansas
Lawrence, Kansas 66045 (913) 864-2700
Course: Wind Power, and Agricultural Alternatives R.W. McColl

University of Utah
Salt Lake City, Utah 84112 (801) 581-7211
Course: Solar Energy Robert Boehm

Other Solar Training Programs

D.C. Associates
402 3rd Street, S.E.
Washington, D.C. 20003 (202) 547-8600
Program: Solar Installment Training in San Diego and California (Job Corps and Solar Energy Industries Association)

Department of Energy (Supervisor)
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
Programs: DOE is currently sponsoring several training programs in many areas (Request *Activities of the Department of Energy in Education*).

Energy Task Force
156 Fifth Avenue
New York, New York 10021 (212) 675-1920
Programs: Solar Installment training for CETA-eligible

Governor's Office of Appropriate Technology
1530 10th Street
Sacramento, California 95814 (916) 445-1803
Programs: Six month training program for community organizations planning to establish solar mechanic training schools.

National Heating and Air Conditioning Homestudy Institute
1661 West Henderson Road
Columbus, Ohio 43220 (614) 459-2100
Programs: Correspondence course—Fundamentals of Solar Heating (for those with training in heating and air conditioning). Textbook ($3.50) and study guide ($3.00) available independently from U.S. Government Printing Office, Washington, D.C. 20402.

National Radio Institute
McGraw-Hill Continuing Education Center
3939 Wisconsin Avenue, N.W.
Washington, D.C. 20016
Programs: Correspondence course in solar heating and cooling, etc.

New England Fuel Institute
Solar Energy Education Division
20 Summer Street
P.O. Box 888
Watertown, Massachusetts 02172 (617) 924-1000
Programs: Solar Heating Installation and Maintenance — four weeks
Solar Heating Technology — five days

Sheet Metal and Air Conditioning Contractors National Association
8224 Old Courthouse Road
Vienna, Virginia 22180 (703) 790-9890
Programs: Training for solar installment instructors (Solar Training Institute)

Total Environmental Action
Church Hill
Harrisville, New Hampshire 03450 (603) 827-3374
Programs: Advanced workshops in passive design, solar water heating and others.

APPENDIX V: GLOSSARY OF ENERGY TERMS

Energy: The capacity to do work.

Renewable Resources: Sources of power in unlimited natural supply such as wind, water, biomass and direct sunlight.

Nonrenewable Resources: Sources of power in limited or finite supply such as uranium, coal, oil, natural gas and other fossil fuels.

Active Solar Heating: A process in which collectors absorb the sun's heat, mechanical pumps transfer heat to a storage system and circulate it to supply buildings with hot water and space heating.

Appropriate Technology: The solving of technical problems by the use of small-scale, ecologically sound operations based on renewable resources and human skills.

Biomass Energy: The production of heat, fuel or electricity from living material (usually plants) and its waste products.

Cogeneration: Technological process using waste heat from electrical generation for space heating or using waste steam to generate electricity.

Conservation: An energy "source" derived from more efficient and productive use of existing resources.

Fission: Nuclear reaction splitting an atom into two approximately equal masses, releasing great quantities of energy. This is the process in a conventional nuclear power plant.

Fossil Fuels: Fuels generated from geological deposits of plant and animal matter under pressure and heat over millions of years. Coal, oil, natural gas, shale and peat.

Fusion: Nuclear reaction forcing light atomic nuclei together forming one large nucleus and releasing energy. Controlled fusion reaction is as yet undeveloped.

Gasohol: Liquid fuel mixture of 90% gasoline and 10% alcohol which is obtained from grains or organic waste.

Geothermal: Harnessing the heat of the earth's core to produce energy, usually through steam.

Greenhouse Effect: The result of increased levels of carbon dioxide in the air. The sun's heat is trapped inside the earth's atmosphere by excess CO_2, altering global temperatures.

Hard Path: Energy policy relying on rapid expansion of centralized, high technology such as coal and nuclear.

Hydroelectric Power: Generation of electricity using a turbine driven by running water.

Insulation: Material that prevents passage of heat from one medium to another such as foam or fiberglass batting. Insulation material is measured by Resistance, given an R value from 1 to 50.

Natural Gas: A mixture of hydrocarbon gases occurring in petroleum deposits; can be supplemented with biomass.

Passive Solar Heating and Cooling: A process which relies on design and siting to capture and distribute the sun's energy in a building.

Photovoltaics: Cells which directly convert sunlight into electricity.

Plutonium: A highly radioactive element occurring in uranium ores and produced artificially by neutron bombardment of uranium. A waste product of nuclear power plants. This is the most dangerous element to humans.

Radiation: The emission and propagation of energy through space or through a material medium in the form of waves.

Radioactivity: The spontaneous emission of radiation either directly from unstable (and hence dangerous) atomic nuclei or as a consequence of nuclear reaction.

Soft Path: Energy policy combining energy efficiency, appropriate technology and the development of renewable resources.

Synfuels: Industrial conversion of minerals such as coal and oil shale into gaseous or liquid fuels.

Uranium: A heavy, metallic, radioactive element with two important isotopes: U238 and U235. U238 yields plutonium when bombarded with neutrons; U235 sustains the energy-releasing chain reaction used in both nuclear plants and atom bombs.

Wind Power: Harnessing wind's power either for mechanical work or to generate electricity.

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